

Fig. 1.



Fig. 2.

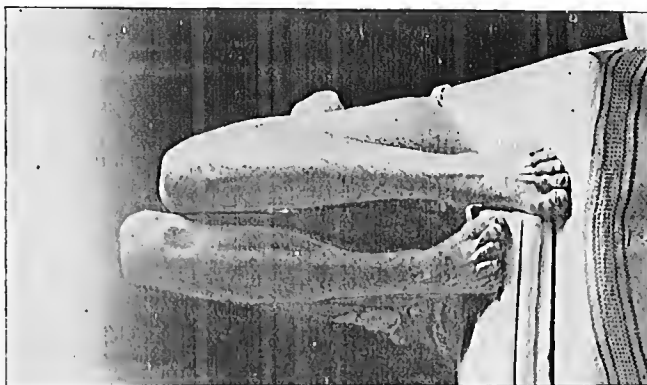


Fig. 3.

In studying the various postures presented the effect of fixation must be borne in mind. This is especially necessary in reference to Fig. 3, which should be compared with Figs. 4 and 5 of the text.

REPORT OF A CASE OF OLD DISLOCATION OF HIP—
ATTEMPTS AT REDUCTION FOLLOWED
BY FATAL HEMORRHAGE.

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EMMET HAWKES, Gazzan, Va.; 24; single; laborer in the mines; previous health good. While at work, October 10th, 1891, with a pick, a piece of loose rock and small stones fell upon him, striking the right hip, causing great pain and deformity; was unable to walk. He had the immediate care of a physician, and afterwards was placed in bed and retained, with limbs tied together. He remained in bed but a few days. On rising he went about with crutches, with the deformity depicted in the accompanying figure. See Frontispiece. (Fig. 1.)

Patient reached Presbyterian Hospital 1-7-92, and was placed in the Patterson free bed.

Present condition: Patient is in a very helpless condition; requires two crutches to enable him to stand or move about. Right limb stands awkwardly off from the body, semiflexed and abducted. It is impossible to bring the foot to the ground with the body in the erect position. The outer gluteal region is flattened (fig. 2) and unsupported. There is a notable fullness below Poupert's ligament, and in the obturator region (fig. 1), and on deep pressure a hard resisting mass is felt, like the head of a femur. The axis of the femur, traced upwards, leads to this point. The movements of the patient are subordinated to the position of the limb, as if the latter were fixed, and strain upon it induced pain. The patient can bring his foot to the ground (fig. 2) by leaning forward and supporting the weight of his bent body upon a table.

When the patient is placed upon his back there is great apparent elongation of the dislocated femur. This, however, is due to fixation of the head in its new bed in the obturator region. In order to bring the right femur into a vertical position the pelvis must be decidedly tilted, owing to fixation of the dislocated femur. See photo, opposite.

In figure 4 the pelvis is represented as horizontal with the right dislocated hip abducted. If the patient was assisted to place the limb perpendicularly, the pelvis tipped, as in figure 5, giving the appearance of decided lengthening.

January 9th, thirteen weeks after the accident, reduction was undertaken. The patient was etherized by Dr. Reynolds and laid upon a mattress upon the floor. Then, in the presence of my colleague, Dr. Willard, Prof. Brinton, of Jefferson Medical College, Dr. Nassau, my senior assistant, Drs. Pearce, Shoemaker and Mr. Ward Brinton, I took hold of the limb, and gently rotating it, felt a decided grating, as if I were tearing it from attachments. This done I flexed the limb, and rotating inward, i. e., carrying the foot towards me, the head was suddenly changed into a dorsal dislocation with its characteristic phenom-

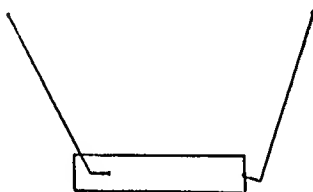


Fig. 4

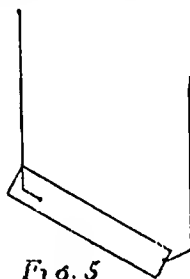


Fig. 5

ena. I then put my flexed left arm in the popliteal space, and while I lifted, I rotated the head inwards to avoid the lip of the acetabulum, and when I felt that I had reached the level of the acetabulum I rotated outward, at the same time with gentle outward circumduction extended the femur. The attempt was followed by reduction of the deformity as far as abduction was concerned, but there persisted a degree of abnormal flexion.

Failing after various attempts to reduce a dorsal dislocation, I undertook to reduce it directly from the obturator region, and during manipulations the condition of the patient became critical—i. e., blanched and pulseless.

To what the shock was due I was unable to determine. Although there arose a gentle fullness in the anterior femoral region, there was nothing to indicate a serious hemorrhage, and feeling that the shock was partly due to manipulations, stimulants hypodermatically with warmth to the body were administered, with the effect of recovery of pulse and consciousness. The ankle pulse came up decidedly and thus

allayed all fear of arterial (femoral) rupture. The patient asked about his condition, complained of pain, and for a time gave promise of rallying. He sank, however, and died at 3.20 P. M. Patient under ether about half an hour.

Autopsy 24 hours after death:

Present—Drs. Brinton, Willard, Porter, Mattern, Nassau, Pearce, Reynolds.

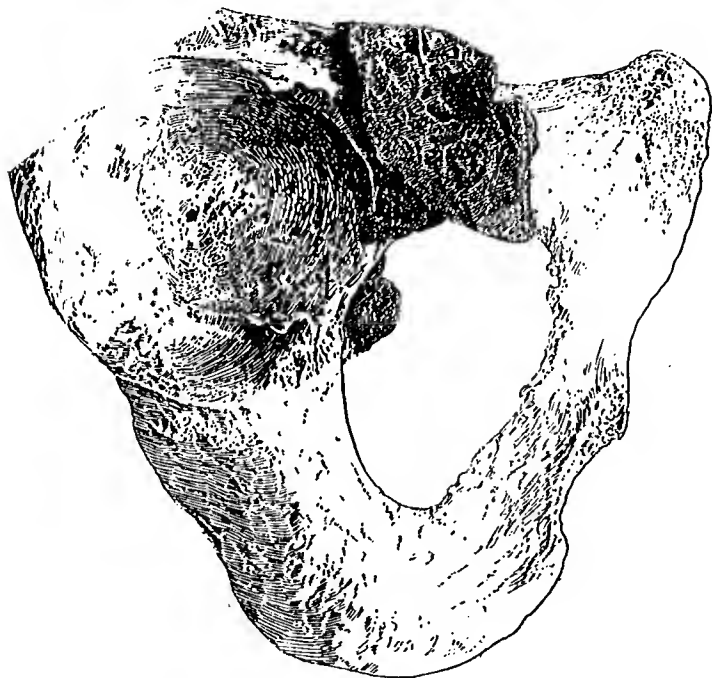


Fig. 6.

Right groin swollen and discolored. Patches of ecchymoses throughout entire leg. On removal of a large flap over right inguinal region extravasated blood was found disseminated through the connective tissue, but no clots. Blood more abundant beneath deep fascia, but not sufficient to give rise to a suspicion of dangerous amount. Blood traced into abdomen and found in quantity in the right lumbar fossa, *i. e.*, to the right of the lumbar vertebra, extending

as high as the kidney. The peritoneum was pushed forward and bulged with the long underlying hæmotoma. The source of hemorrhage was ascertained to be at the junction of the superficial with the deep femoral vein. The hemorrhage had followed the sheath of the deep femoral vessels and escaped into the abdomen between layers of the retro-peritoneal fascia. The locality of the rupture explained why there were no well-marked signs of hemorrhage at the point of laceration.

On the inner aspect of the acetabulum, but not springing from it or encroaching upon it, were exostoses of various sizes. The largest was an inch in diameter, and projected horizontally half an inch in advance of the normal structure.

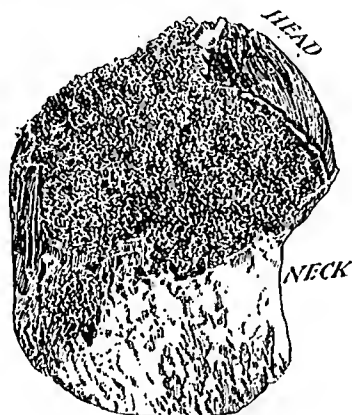


Fig. 7.

The head of the femur was almost entirely denuded of cartilage, and presented the unprotected cancellous structure similar to what is seen in advanced hip disease. The acetabulum was found full of fine pulpified muscular tissue. This, on removal, revealed a normal acetabulum. It had not shrunk, nor become filled up by fatty tissue, nor did it present any obstacle to reduction save the muscular fibre already mentioned.

At the autopsy I found no obstacle to reduction, and have no doubt that the head was carried into its socket by my earliest manipulations. The autopsy explained why, after reduction, there was resistance to complete extension, viz., an acetabulum filled with pulpified muscle. The capsule was largely torn save the ilio-femoral band.

The head of the bone was somewhat diminished in size, and could not, from its softened vascular condition, have yielded the peculiar response that is so characteristic of reductions.

The awkward flexion and abduction was due in a great measure to the sartorius muscle, which was drawn tense and acted like a long ligament.

REMARKS.

There is room for speculation as to the cause of the laceration in the vessels. This laceration was, as previously stated, at the junction of the superficial and deep femoral veins. There was no severing of one from the other, but a splitting at the crotch. The split was ample for the escape of nearly the full column of blood, and had the flow not been checked by the sheath of the vessels death would have been immediate.

It was the opinion of those who witnessed the autopsy that the vessel had been carried against the sharp edge of the exostosis, (Fig. 6) and the near approach of this excrescence to the seats of the vessels gives color to such a theory.

In connection with this, however, must be considered the condition of the head of the femur. It was not smoothly polished, glistening, as it is under normal conditions, but denuded of cartilage, and as rough as the carious head in advanced hip disease; under such circumstances the head in being carried about over the tissues had a tendency to drag upon them.

At first these theories quite satisfied me, but upon maturer thought queries arise that cannot be explained away by them. If the hemorrhage was due to dragging the vessel against this sharp exostosis, why should the arteries escape which lay in closer proximity to the dislocated head? The solution of the hemorrhage is, I believe, readily solved upon a purely anatomical principle. It will be remembered that the hemorrhage was from a tear or split at the junction of the superficial with the deep femoral vein. Now these two great blood channels are separated by the fascia lata. The saphena lies *above, i. e.*, superficial to it, while the femoral vein lies upon the floor of Scarpa's triangle. When, then, the circumductions of the femoral head took place its plane of action was between the planes of these vessels, and coming against them at their junction beneath the cribriform opening, forced them assunder, acting as a wedge.

There was a condition that favored this laceration, viz., the inflammatory processes that unified the tissues at the seat of the displaced head. Dr. Brinton called my attention to adhesions of the blood vessels in the vicinity of the rupture. Such a condition would render the vessels less free and less capable of accommodating themselves to tension, a tension all the more probable from the roughened head of the femur.

In the following case, it is worthy of note that the hemorrhage was from the femoral vein, and probably due to sudden traction of the superficial upon the deep femoral vessels.

A mounted artilleryman, while galloping, fell from his horse in front of the gun, and his left leg was bent back so violently that the heel lay against the back of his shoulder, and the head of the femur with the torn ligamentum teres projected through the fold of the groin. There was profuse bleeding from the femoral vein, and the man died within twenty-four hours.—*Abstract in Central blatt für Chirurgie*, 1880, p. 504. *From Stimpson Dislocations*, 1888.

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